

**Figure 2.**—The bladder stone is shown partially comminuted, with an embedded stent and a ureteral calculus (arrow).

tempted electrohydraulic lithotripsy to comminute the bladder stone, we did a cystolithotomy and ureterolithotomy to remove the calculi and stent (Figure 2). Inspection of the ureteral calculus revealed a piece of the stent passing through the core.

### Discussion

Ureteral stents were popularized in the late 1960s with the availability of silicone tubing that could be passed endoscopically.<sup>5</sup> Over subsequent years, stents were modified in composition<sup>6</sup> and configuration.<sup>7</sup> The straight silicone ureteral stent placed in our patient was prone to migration, accounting for most of it passing into his urinary bladder.

Bladder stones in men usually result from factors promoting urinary stasis, including prostatic hypertrophy, bladder diverticulum, or urethral stricture. Cystoscopy enabled us to determine that our patient had a retained ureteral stent which served as a nidus for stone formation. Previously a patient was reported to have a heavily calcified ureteral stent retained for two years.<sup>3</sup> Several authors have discussed the need for ancillary procedures to remove calcified ureteral stents.<sup>3,8</sup> Another patient was reported to have a retained ureteral stent for 17 months that fractured, requiring several methods to retrieve.<sup>9</sup> To our knowledge, 18 years is the longest reported duration for a retained ureteral stent.

Patients with indwelling ureteral stents may report a variety of symptoms, including loin pain, lower abdominal pain, hematuria, dysuria, frequency, and nocturia.<sup>10</sup> These symptoms are presumably caused by irritation from the presence of the foreign body. Alternatively, it has been suggested that a ureteral stent causes little or no discomfort, and most patients tend to forget its presence.<sup>4</sup> Our case report supports this idea, given our patient's sustained tolerance for the forgotten stent and stone burden. Stent removal will generally alleviate most troublesome symptoms, although nocturia may be a persistent complaint for reasons that remain unclear.<sup>10</sup>

While the urologist placing a ureteral stent will ultimately be responsible for its management, patients may seek assistance from their primary physicians for symptoms referable to the stent that can be addressed based on an understanding of the reasons for stent placement and the duration of the stent's presence. Most important, this report reemphasizes the need from a medical and legal standpoint to ensure patient compliance with appropriate follow-up once stents are placed.

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## Necrotic Arachnidism

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SPIDER BITES are common; most produce minor local irritation requiring no treatment. There is a group of spiders, however, known to produce cutaneous necrosis and various systemic symptoms. *Loxosceles reclusa* (the brown recluse spider) may be blamed for all necrotic spider bites, even in parts of the country where it is not found. We present two cases incriminating another spider, *Tege-naria agrestis*, as the causative agent. Recognizing the bite of *T agrestis* may be important to anticipate possible serious late complications.<sup>1-3</sup> In addition, the inappropriate inclusion of victims of *T agrestis* bites in studies of new therapies for *L reclusa* spider bites may invalidate those studies.

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**Figure 1.**—A bite wound of *Tegenaria agrestis* is shown on a 2-year-old boy's leg 3 days after it is first seen.

## Report of Cases

### Patient 1

A lesion developed on the back of the leg of this 24-month-old male toddler. The patient's father, a physician, described it as an 8-mm firm papule with a central pustular area that was not tender. There had been no crying or change in the child's behavior at any time during the day to suggest that the bite had been painful. Erythema and induration increased over the next 24 hours. Three days later the center of the lesion was punctate, with a discolored, necrotic center covered with an eschar (Figure 1). Other than an oral antibiotic, no treatment was given, and the lesion resolved in about four weeks. No systemic manifestations developed. There is a residual scar. A search inside and outside the patient's home readily recovered several specimens identified as *T agrestis* (Figure 2).

### Patient 2

The patient, a 17-year-old girl, walked into a spider web. She felt no pain at the time, but saw a large brown spider in the area. Later that evening she noted the appearance of lesions she described as "pimples" on her right proximal dorsal forearm and right palm. The lesions progressed to develop necrotic centers. She was seen two days later with a 1-cm area of necrosis surrounded by a

4-cm area of erythema on the right forearm and a smaller 3-mm area of necrosis on the right palm. She had no systemic illness. The larger lesion was unroofed and debrided. Both lesions healed well with no residual scarring.

## Discussion

In the usual clinical setting, the spider actually responsible for a clinically notable bite is seldom recovered and identified. Circumstantial evidence is used to presume the identity of the offending spider. Although reports have attributed necrotic lesions to the bites of *Loxosceles*, *Chiracanthium*, *Argiope*, *Lycosa*, and *Phidippas* species, nearly all bites in this country have been thought to be caused by *Loxosceles reclusa*.<sup>4</sup> The importance of *Tegenaria agrestis*, although mentioned in toxinology journals, has not been widely recognized. In fact, two recent reviews of spider bites fail to mention this species.<sup>5,6</sup> Consequently, clinicians are prone to blame all necrotic spider bites on the recluse.

We report the cases of two patients in Tacoma, Washington, with necrotic spider bites that incriminate *T agrestis* as the responsible agent. A search of the patients' homes revealed several *T agrestis* and no other specimens known to produce necrotic lesions. It is important to remember that the brown recluse spider is not found in the Northwest.<sup>4</sup> Additional support for *T agrestis* as the causative agent comes from the work of Vest, who has reported numerous additional cases of probable *T agrestis* envenomation,<sup>3</sup> in some cases with recovery of the spider responsible for the bite. Necrotic skin lesions have been reproduced in animals as well.<sup>7</sup>

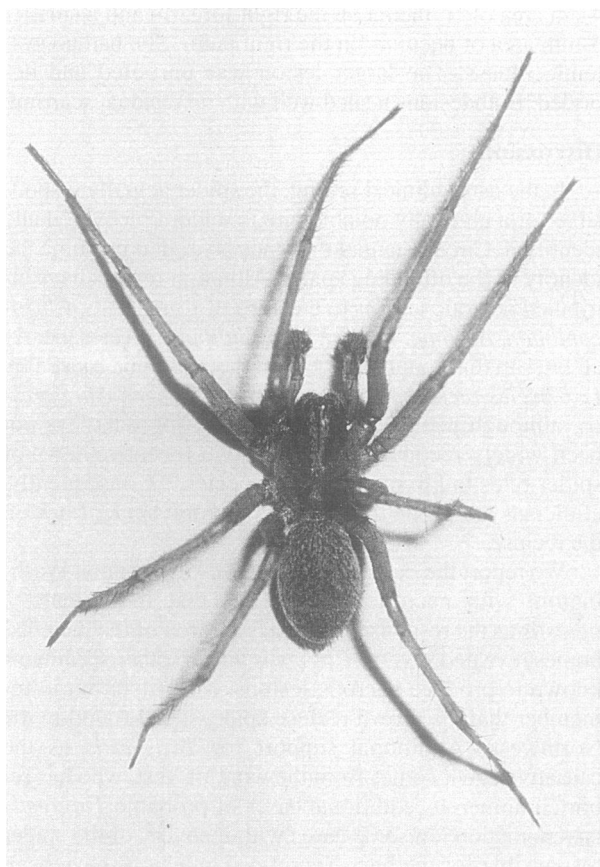
*Tegenaria agrestis* has been variously referred to in the literature as the aggressive house spider (it is not aggressive, despite claims to the contrary<sup>8</sup>), the hobo spider, the Walckenaer spider, the northwestern brown spider, and the funnel-web spider. The last name has been used because of the spider's distinctive funnel-shaped web; it should be remembered, however, that the spider most often called the funnel-web is an Australian spider (*Atrax robustus*) that is deadly and is not related to *T agrestis*. Because reports in this country have thus far been limited to the Northwest, we prefer the name "northwestern brown spider."

Our two patients had necrotic skin lesions but no systemic symptoms. Their clinical course was consistent with that of previously reported cases as follows<sup>9</sup>:

- First, a small reddened area of induration appears, often with surrounding erythema;
- A vesicle or vesicles appear 15 to 35 hours later;
- About 24 hours later, the vesicles burst, and serum oozes;
- Eschars form for lesions left dry;
- Subeschar necrosis then develops, which can be limited or extensive.

Both local and systemic reactions to the northwestern brown spider bite may be less severe than those to the brown recluse. Thus, response to therapy may be different.

About 40% of patients with *Tegenaria* bites appear to



**Figure 2.**—A male *Tegenaria agrestis* spider was recovered from the home of patient 1. The average body length of *T agrestis* spiders is 10 mm (range, 7 to 14 mm), with a leg span of 35 mm (range, 27 to 45 mm).

have some systemic symptoms.<sup>2,9</sup> The most prominent of these is headache, which begins anywhere from 30 minutes to several days after the bite (usually within 10 hours). Headaches are severe, last two to seven days, and are only minimally responsive to analgesics. There may be associated visual symptoms not unlike those of migraine. Auditory and visual hallucinations also occur, and many other patients report "feeling odd," as though they had taken a psychotropic drug. One patient reported that the feeling mimicked the effects of psilocybin.<sup>9</sup>

Weakness and lethargy are also common and can be severe and protracted. In a recent series, four of nine victims of *T agrestis* bites had such profound weakness that they were unable to walk unassisted for as long as seven days after the bite.<sup>3</sup>

Other systemic effects include dry mouth, anorexia, dizziness, disorientation, joint pain, paresthesias, and mild dyspnea.

About 15% of *T agrestis* bite victims have hemodynamic changes, notably a reduction in platelet number, erythrocyte spherocytosis, and hemolysis. Another 5% of

patients have severe systemic responses that may include intractable vomiting or secretory diarrhea. Rarely, a delayed aplastic response has been associated with the bite of *T agrestis*, with pancytopenia beginning about three weeks after the bite.<sup>2</sup> The cause of this reaction is not known. One case of severe, refractory aplasia culminated in death.<sup>3</sup> The bite of *T agrestis* appears to be the only bite or sting that has been associated with pancytopenia.

Our patients were bitten in the summer months, a season usually associated with bites by the mature male. The bite of the mature male is most common and produces cutaneous necrosis often accompanied by the systemic manifestations outlined earlier. The bite of the mature female is seen more commonly in October or November. It produces a well-defined cutaneous erythematous macule that develops a pinpoint white vesicle in its center, then is reabsorbed. It does not usually produce notable subcutaneous necrosis and may not induce systemic manifestations. Laboratory experiments have shown that the venom of the male spider contains substantial quantities of two proteins that are found in only trace amounts in the venom of the female.<sup>2</sup>

The bite of immature *T agrestis* spiders may produce envenomation equivalent to, or more serious than, that seen in the bites of adult spiders. Bites seen during the winter months, when adult spiders are absent, are uncommon; however, they are frequently accompanied by severe local and systemic reactions.<sup>3</sup>

Our patients appeared to have no pain at the time of the bite. This lack of pain may be helpful in recognizing these bites. *Tegenaria agrestis* appears to be the most common cause of serious spider bites in the Pacific Northwest. Physicians, particularly those in the Northwest, need to be aware of the possibility of bites by the northwestern brown spider.

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